Série příkladů č. 5

Vypočtěte integrály:

- $\int \frac{\sqrt{x}\,(x^2-1)}{\sqrt[3]{x}}\,\mathrm{d}x;$ $\left[\frac{6}{19}\sqrt[6]{x^{19}} - \frac{6}{7}\sqrt[6]{x^7}\right]$
- $\int \frac{x^3-1}{x^2-x}\,\mathrm{d}x;$ $\left[\frac{x^2}{2} + x + \ln|x|\right]$
- $\int (2x+5)\cos x\,\mathrm{d}x;$ $\left[2\cos x + (2x+5)\sin x\right]$
- $\int (x^2+x+1)\sin x\,\mathrm{d}x;$ $\left[(-x^2-x+1)\cos x + (2x+1)\sin x\right]$
- $\int \sqrt{x}\ln x\,\mathrm{d}x;$ $\left[\sqrt{x^3}\left(\frac{2}{3}\ln x - \frac{4}{9}\right)\right]$
- $\int \mathrm{e}^{3x+7}\,\mathrm{d}x;$ $\left[\frac{1}{3}\,\mathrm{e}^{3x+7}\right]$
- $\int x^2\sqrt{x^3+1}\,\mathrm{d}x;$ $\left[\frac{2}{9}\sqrt{(x^3+1)^3}\right]$
- $\int \frac{x}{\sqrt[3]{x^2+7}}\,\mathrm{d}x;$ $\left[\frac{3}{4}\sqrt[3]{(x^2+7)^2}\right]$
- $\int \frac{x+3}{x^2-1}\,\mathrm{d}x;$ $\left[2\ln|x-1| - \ln|x+1|\right]$
- $\int \frac{x^2+x+1}{x^3+x}\,\mathrm{d}x;$ $\left[\operatorname{arctg} x + \ln|x|\right]$
- $\int \sin^3 x\,\mathrm{d}x;$ $\left[\frac{\cos^3 x}{3} - \cos x\right]$
- $\int \frac{\sin^3 x}{\cos^2 x}\,\mathrm{d}x;$ $\left[\cos x + \frac{1}{\cos x}\right]$
- $\int \frac{1}{1+\sqrt{x}}\,\mathrm{d}x;$ $\left[2\sqrt{x} - 2\ln(\sqrt{x}+1)\right]$
- $\int x^2\sqrt{x+2}\,\mathrm{d}x.$ $\left[\frac{2}{105}(15x^2-24x+32)\sqrt{(x+2)^3}\right]$